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EXAMINER

PUENTE, EMERSON C

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/721,064	TALAGALA ET AL.	
	Examiner	Art Unit	
	Emerson C Puente	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is made **FINAL**. Claims 1-31 have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,6,12,13,15,16,18-26, and 28-31 are rejected under 35 U.S.C. § **103(a)** as being unpatentable over "RaQ a fine low cost Web server alternative" by Kevin Railsback, referred hereinafter "Railsback" in view of US Patent No. 4,602,164 of Gore, III et al. referred hereinafter "Gore".

In regards to claim 1, Railsback discloses:

a processor (see page 1);

a system memory coupled to said processor (see page 2);

a network interface for connecting to a network (see page 2);

one or more drive controllers coupled to the processor (see page 2); and

an array of disk drives coupled to said one or more drive controllers and configured to be organized into one or more RAID logical volumes and presented to client machines as one or more filesystems through said network interface (see page 2)

However, Railsback fails to explicitly disclose

wherein said processor, said system memory, and said network interface, said one or more drive controllers, and said array of disk drives are packaged as a single field replaceable unit (FRU) so that said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives are configured not to be individually field replaceable

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Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and having said processor, said system memory, and said network interface, said one or more drive controllers, and said array of disk drives are packaged as a single field replaceable unit (FRU) so that said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives are configured not to be individually field replaceable, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

In regards to claim 2, Railsback discloses wherein said processor, said system memory, said network interface, and said one or more drive controllers, and said array of disk drives are attached to said motherboard so as not to be field replaceable (see page 1).

In regards to claim 6, Railsback in view of Gore fails to explicitly disclose wherein said array of disk drives are configured to provide storage for at least a quarter of a terabyte of data in said single field replaceable unit. However, as technology is evolving, systems are becoming faster and storage capabilities are continuing to increase in size. Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have storage space capability to at least a quarter of a terabyte in said single field replacement unit.

In regards to claim 12, Railsback discloses wherein said single field replaceable unit is configured to provide office network services including issuing IP addresses to client machines, web page server services, and electronic mail services for client machines (see page 2)

In regards to claim 13, Railsback in view of Gore discloses wherein the number of physical disk drives is fixed in said single field replaceable unit so that additional physical disk drives cannot be added to said single field replaceable unit in the field because Gore discloses FRUs and FRUs are fixed unit which cannot be modified in the field (see column 1 lines 35-45).

In regards to claim 15, Railsback discloses:

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one or more processors (see page 1)

a network interface coupled to said one or more processors (see page 2);

an array of disk drives coupled to said one or more processors and said network interface, wherein said array of disk drives is configured to be provided as one or more filesystems through said network interface (see page 2);

a network coupled to said network interface of said single field replaceable unit (see page 2);

one or more client machines coupled to said network and configured to access over said network said one or more filesystems provided by said array of disk drives within said single field replaceable unit (see page 2);

However, Railsback fails to disclose:

wherein said processor, said network interface, and said array of disk drives are configured not to be individually field serviceable or field replaceable;

Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and having said processor, said network interface, and said array of disk drives are configured not to be individually field serviceable or field replaceable, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

In regards to claim 16, Railsback discloses wherein said array of disk drives within said single field replaceable unit are configured into RAID logical volumes (see page 2)

In regards to claim 18, Railsback in view of Gore fails to explicitly disclose wherein said array of disk drives are configured to provide storage for at least a quarter of a terabyte of data in said single field replaceable unit. However, as technology is evolving, systems are becoming faster and storage capabilities are continuing to increase in size. Thus, it would have been

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obvious for one of ordinary skill in the art at the time the invention was made to have storage space capability to at least a quarter of a terabyte in said single field replacement unit.

In regards to claim 19, Railsback discloses wherein said single field replaceable unit is configured to provide office network services including issuing IP addresses to client machines, web page server services, and electronic mail services for client machines (see page 2)

In regards to claim 20, Railsback in view of Gore discloses wherein the number of physical disk drives is fixed in said single field replaceable unit so that additional physical disk drives cannot be added to said single field replaceable unit in the field because Gore discloses FRUs and FRUs are fixed unit which cannot be modified in the field (see column 1 lines 35-45).

In regards to claim 21, Railsback discloses a storage rack having multiple ones of said single field replaceable unit coupled together over said network (see page 3)

In regards to claim 22, Railsback discloses:

processor, network interface, and array of disk drives (see page 2)

wherein said processor, said network interface, and said array of disk drives are configured to provide one or more filesystems to client machines through said network interface (see page 2)

preinstalling software on said single field replaceable unit configurable to organize said array of disk drives into one or more RAID logical volumes to be presented to client machines as one or more filesystems through said network interface. Railsback discloses a RAID storage(see page 2), thus would be inherent to preinstall software on a single field replaceable unit in order to organize said array of disk drives in one or more RAID logical volumes;

after said assembling and said preinstalling, shipping said single field replaceable unit to a user. It would be inherent after assembling and preinstalling, to ship said field replaceable unit in order for the user to receive the unit; and

However, Railsback fails to disclose:

assembling a processor, network interface and array of disk drives as a single field replaceable unit (FRU) so that said processor, said network interface, and said array of disk drives are configured not to be individually field serviceable or field replaceable, and

replacing said single field replaceable unit as a whole upon failure, wherein said single field replaceable unit has no serviceable internal parts

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Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and assembling a processor, network interface and array of disk drives as a single field replaceable unit (FRU) so that said processor, said network interface, and said array of disk drives are configured not to be individually field serviceable or field replaceable, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

In regards to claim 23, Railsback in view of Gore discloses wherein the storage capacity of said single field replaceable unit is not individually upgradeable because Gore discloses FRUs and FRUs are fixed unit which cannot be modified in the field (see column 1 lines 35-45). Furthermore, Railsback discloses upgrading the computer resources by the user installing one or more additional ones of said field replaceable unit (see page 3).

In regards to claim 24, Railsback discloses providing computer resources, comprising:
configuring a plurality of field replaceable storage units in an enclosure, wherein each field replaceable storage unit comprises an array of hard drives and is configured to make the hard drives available on a network (see page 2)

However, Railsback fails to disclose:

detecting a failure in one of the field replaceable storage units
replacing as a whole the field replaceable unit having the failure

Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and detecting a failure in one of the field replaceable storage units and replacing as a

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whole the field replaceable unit having the failure, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

In regards to claim 25, Railsback discloses expanding the computing resources by adding one or more additional field replaceable storage units to the enclosure, wherein each additional field replaceable storage unit comprises an array of hard drives and is configured to make the hard drives available on the network (see page 3).

In regards to claim 26, Railsback discloses wherein the array of hard drives within field replaceable storage units is configured into RAID logical volumes (see page 2).

In regards to claim 28, Railsback in view of Gore fails to explicitly disclose wherein said field replaceable storage unit is configured to provide storage for at least a quarter of a terabyte of data. However, as technology is evolving, systems are becoming faster and storage capabilities are continuing to increase in size. Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have storage space capability to at least a quarter of a terabyte in said single field replacement unit.

In regards to claim 29, Railsback in view of Gore discloses wherein the number of hard drives of each array of hard drives is fixed in said single field replaceable unit so that additional physical disk drives cannot be added to individual replaceable unit in the field because Gore discloses FRUs and FRUs are fixed unit which cannot be modified in the field (see column 1 lines 35-45).

In regards to claim 30, Railsback discloses a system comprising:
an enclosure configured to hold a plurality of individual field replaceable storage units (see page 3)

one or more processors (page 1); and

an array of disk drives coupled to said one or more processors, wherein said processor and said array of disk drives are configured to provide one or more filesystems to a network (see page 2)

wherein said enclosure is configured so that each individual field replaceable storage unit is individually removable or insertable (see page 3),

However, Railsback fails to disclose:

wherein each individual field replaceable unit is configured so that said one or more processors and said array of disk drives are configured not to be individually field serviceable or field replaceable so that failed one of said individual field replaceable storage units are replaced in said enclosure as a whole.

Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and having each individual field replaceable unit configured so that said one or more processors and said array of disk drives are configured not to be individually field serviceable or field replaceable so that failed one of said individual field replaceable storage units are replaced in said enclosure as a whole, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

In regards to claim 31, Railsback discloses:

- a processor (see page 1);
- a system memory coupled to said processor (see page 2);
- a network interface for connecting to the network (see page 2);
- one or more drive controllers coupled to the processor(see page 2); and
- an array of disk drives coupled to said one or more drive controllers and configured to be organized into one or more RAID logical volumes and presented client machines as one or more filesystems through said network interface (see page 2)

However, Railsback fail to explicitly disclose:

wherein said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives are packaged as a field replaceable unit (FRU), wherein said field replaceable unit is sealed to prevent said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives from being separately field replaceable.

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Gore discloses FRUs enables fixing machine problem by replacing the defective FRU with a non-defective one, thus eliminating the need of services of customer engineers, which in turn alleviates cost problems (see column 1 lines 38-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Railsback and Gore. A person of ordinary skill in the art would have been motivated to make the combination because Railsback is concerned with cost (see page 1) and having said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives are packaged as a field replaceable unit (FRU), wherein said field replaceable unit is sealed to prevent said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives from being separately field replaceable, as per teaching of Gore, alleviates cost problems by eliminating the need of services of customer engineers because machine problem are fixed by replacing defective FRU with a non-defective one.

Claims 3, 4, and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Railsback in view of Gore and in further view of US Patent No. 5,812,754 of Lui et al. referred hereinafter "Lui".

In regards to claim 3, Railsback in view of Gore fails to explicitly disclose one or more fans configured to flow air over said array of disk drives and said processor, wherein said one or more fans are packaged as part of said single field replaceable unit and are configured not to be individually field serviceable or field replaceable.

However, Lui discloses a RAID system including one or more fans and configured to flow air over said array of disk drives and said processor (see figure 7 and column 3 lines 50-55)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have one or more fans configured to flow air over said array of disk drives and said processor, wherein said one or more fans are packaged as part of said single field replaceable unit and are configured not to be individually field serviceable or field replaceable. A person of ordinary skill in the art would have been motivated to make the modification because fans would provide cooling for the data storage system, as per teaching of Lui.

In regards to claim 4, Lui discloses wherein said one or more fans comprise a row of fans positioned between array of disk drives and said processors (see figure 7).

In regards to claim 7, Railsback in view of Gore fails to disclose a power supply configured to supply power to said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives, wherein said power supply is part of said single field replaceable unit and is configured not to be individually field serviceable or field replaceable.

However, Lui discloses a power supply configured to supply power to said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives, (see figure 7 and column 3 lines 50-55)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to a power supply configured to supply power to said processor, said system memory, said network interface, said one or more drive controllers, and said array of disk drives. A person of ordinary skill in the art would have been motivated to make the modification because a power supply, as per teachings of Lui, would supply power to the storage system, enabling the storage system to function.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Railsback in view of Gore and in further view of Lui and Microsoft Computer Dictionary 3rd edition referred hereinafter as "Microsoft".

In regards to claims 5, 17, and 27, Railsback in view of Gore fails to disclose wherein said one or more drive controllers comprise four ATA-type drive interfaces, and wherein said array of disk drives comprises eight ATA-type disk drives

Lui discloses wherein said one or more drive controllers comprise four drive interfaces, and wherein said array of disk drives comprises eight disk drives.

It would have been obvious to one of ordinary skill in the art at the time the invention was made wherein said one or more drive controllers comprise four drive interfaces, and wherein said array of disk drives comprises eight disk drives. A person of ordinary skill in the art would have been motivated because Railsback discloses a RAID system (see page 2) and Lui teaches a

RAID wherein said one or more drive controllers comprise four drive interfaces, and wherein said array of disk drives comprises eight disk drives

Furthermore, Microsoft discloses ATA as type of disk drive which reduces interface cost and making firmware implementation easier (see page 34 "ATA/IDE hard disk drive").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have ATA-type drive interfaces, and wherein said array of disk drives comprises ATA-type disk drives. A person of ordinary skill in the art would have been motivated because ATA type disk drives reduces interface cost and further makes firmware implementation easier, as per teaching of Microsoft.

Claims 8-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Railsback in view of Gore and in further view of US Patent No. 6,230,190 of Edmonds et al. referred hereinafter "Edmonds".

In regards to claim 8, Railsback discloses wherein said processor is configured to execute a UNIX-type operating system (see page 2).

However, Railsback in view of Gore fails to explicitly disclose:

presenting said array of disk drives as a Network File System (NFS) or Common Internet File System (CIFS) filesystem to a network through said network interface so that the filesystem can be mounted by client machines.

Edmonds discloses wherein Microsoft-based and UNIX based systems use CIFS and NFS, respectively for file sharing protocol (see column 4 lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to present said array of disk drives as a Network File System (NFS) or Common Internet File System (CIFS) filesystem to a network through said network interface so that the filesystem can be mounted by client machines. A person of ordinary skill in the art would have been motivated because Network File System (NFS) or Common Internet File System (CIFS) are known protocols that provide file sharing in a file system, as per teaching of Edmonds (see column 4 lines 30-40).

In regards to claim 9, Edmonds discloses wherein the filesystem is configured to be accessible by UNIX clients or Window clients (see column 4 lines 30-40).

In regards to claim 10, Railsback discloses wherein said processor is configured to execute a Linux-type operating system.

However, Railsback in view of Gore fails to explicitly disclose:
presenting said array of disk drives as a Network File System (NFS) or Common Internet File System (CIFS) filesystem to a network through said network interface so that the filesystem can be mounted by client machines.

Edmonds discloses wherein Microsoft-based and UNIX based systems use CIFS and NFS, respectively for file sharing protocol (see column 4 lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to present said array of disk drives as a Network File System (NFS) or Common Internet File System (CIFS) filesystem to a network through said network interface so that the filesystem can be mounted by client machines. A person of ordinary skill in the art would have been motivated because Network File System (NFS) or Common Internet File System (CIFS) are known protocols that provide file sharing in a file system, as per teaching of Edmonds (see column 4 lines 30-40).

In regards to claim 11, Edmonds discloses wherein the filesystem is configured to be accessible by UNIX clients or Window clients (see column 4 lines 30-40).

Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Railsback in view of Gore and in further view of US Patent No. 5,663,868 of Stalley et al. referred hereinafter "Stalley".

In regards to claim 14, Railsback in view of Gore fails to explicitly disclose wherein said single field replaceable unit is configured to be rack-mounted and has a height less than or equal to 1.75 inches.

However, Stalley discloses standard dimension for cabinets stacked vertically is in multiples of 1.75 inches (see column 1 lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have each single field replaceable unit configured to be rack-mounted and has a height less than or equal to 1.75 inches. A person of ordinary skill in the art would have been motivated to make the modification because a rack mount wherein each unit has a height of 1.75

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inches is an internationally agreed dimensions, thus being a standard, as per teaching of Stalley (see column 1 lines 10-15).

Claims 17 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Railsback in view of Gore and in further view of Microsoft Computer Dictionary 3rd edition referred hereinafter as "Microsoft".

Railsback in view of Gore fails to disclose wherein said array of disk drives within said single field replaceable unit are ATA-type disk drives.

Microsoft discloses ATA as type of disk drive which reduces interface cost and making firmware implementation easier (see page 34 "ATA/IDE hard disk drive").

It would have been obvious to one of ordinary skill in the art at the time the invention was made wherein said array of disk drives within said single field replaceable unit are ATA-type disk drives. A person of ordinary skill in the art would have been motivated to make the modification because ATA type disk drives reduces interface cost and further makes firmware implementation easier, as per teaching of Microsoft.

Response to Arguments

Applicant's arguments filed July 17, 2004 have been fully considered but they are not deemed to be persuasive.

In response to applicant's argument on page 2 that cites: "the cited art does not teach or suggest a single field replaceable unit wherein the processor, system memory, network interface, one or more drive controllers, and array of disk drives are packaged ms a single field replaceable unit (FRUI so that the processor, system memory, network interface, one or more drive controllers, and array of disk drives are configured not to be individually field serviceable or field replaceable. In fact, both Railsback and Gore teach just the opposite. Railsback teaches the importance of scalability (p. 1) and describes that RaQ 3i has internal space for a second hard drive" and that "[o]ne major new feature of the Rao 3i is the inclusion of a PCI slot" that tçallows for even further system expansion" 1. 2). Thus, Railsback clearly stresses the importance of system expansion by being able to add (or swap) additional components in the

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field. Similarly, Gore teaches the field replacement of individual components in a system,” examiner respectfully disagrees.

First of all, by having a single field replaceable unit by making components not individually field replaceable, the applicant is making the components integral. Applicant challenges the reasons set forth by the examiner supporting the obviousness rejection of claim 1-30. As shown in *In re Larson* 144 USPQ 347 (CCPA 1965) to make integral would have been obvious improvements. For this reason alone, argument is moot and examiner maintains his rejection.

Nevertheless, for the sake of argument, the applicant claims wherein the components are configured not to be individually field replaceable. The examiner interprets not being individually field replaceable or serviceable as being unable to service or replace the individual component in the field to fix problems. Nowhere in the reference does Rainsback say that problems have to be fixed in the field. The fact that there is expansion possibility does not mean that the components are individually field serviceable or replaceable. Furthermore, being able to add components does not necessarily mean adding components in the field. A device can easily be constructed such that in order for one to add components, one must send the device back to the manufacturer, who will then add the components.

Gore further discloses the advantage of integrating parts (wherein the components are not individually field replaceable) such that the system or device is a single field replaceable unit. He states making a unit or device such that the whole unit or device is replaced alleviates the need of a customer engineer to service the problem. The problem can be fixed by replacing the failed device or unit with an identical one and sending failed unit or device to the manufacturer to be fixed (see column 1 lines 45-53). Thus it would have been obvious to make the device disclosed in Rainsback into a field replaceable unit, as disclosed in Gore. Examiner maintains his rejection.

In response to applicant's argument on page 3 that cites: “the cited art does not teach or suggest an array of disk drives coupled to said one or more drive controller and configured to be organized into one or more RAID logical volumes,” examiner respectfully disagrees. Rainsback indicates a RAID array card allowing you to add larger and more reliable storage to the system (see page 2). Having storage in the system with a RAID array card would create a RAID (redundant array of independent disk) system. A RAID system is a group of disk drives

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(controlled by disk controllers) that function as a single storage unit, thus indicating an array of disk drives coupled to said one or more drive controller and configured to be organized into one or more RAID logical volumes. Examiner maintains his rejection.

In response to applicant's argument on page 3 that cites: "the cited art does not teach or suggest a motherboard wherein said processor, said memory system, said network interface, said one or more drive controllers, and said array of disk drives are attached to said motherboard so as not to be field removable," examiner respectfully disagrees. Since the unit disclosed in Railsback in view of Gore is a single field replaceable unit, the individual components must be attached to the motherboard so as not to be field removable. Examiner maintains his rejection.

In response to applicant's argument on page 4 that cites: "By considering the future evolution of storage systems, the Examiner is applying an improper timeframe for determining patentability. Patentability must be determined at the time of the invention, not according to any future speculation. At the time of Applicant's invention, conventional wisdom on drive arrays that provided at least a quarter of a terabyte of data as a single field replaceable unit with a processor, system memory, network, interface, and one or more drive controllers," examiner respectfully disagrees. Applicant challenges the reasons set forth by the examiner supporting the obviousness rejection of claim 6. As shown in *In re Rose*, 105 USPQ 237 (CCPA 1955) changes in size/range would have been obvious improvements.

Furthermore, having drive arrays that provide at least a quarter of a terabyte was known at the time of the invention. For support, examiner has included US Patent No. 6,161,152 of Garg, which discloses terabyte storage systems (see column 7 line 6). Examiner maintains his rejection.

In response to applicant's argument on page 4 that cites: "Railsback does mention configuring an IP address for the RaQ 3i server, but there is no mention of issuing IP address to client machines. Thus, the rejection of claim 12 is improper," examiner respectfully disagrees. It is inherent for the RaQ web server to issue an IP to client computer in order for the client computers to connect to and identify itself in the network. For further explanation, examiner request applicant to look at reference "How Web Servers Work" for a basic understanding of web servers. The reference states that "to keep all machines straight, each machine on the internet is assigned a unique address called an IP address" and further states that a home machine

(client) that is connecting to the internet has an IP address assigned by the ISP (RaQ web server). Examiner maintains his rejection.

In response to applicant's argument on page 4 that cites: "the cited art does not teach that the number of physical disk of said array of disk drives is fixed in said single field replaceable unit so that additional physical disk drives cannot be added to said single field," examiner respectfully disagrees. Since the unit disclosed in Railsback in view of Gore is a single field replaceable unit, there cannot be additional physical drives added to the single field replaceable unit in the field, thus indicating a fixed number of disk drives. Examiner maintains his rejection.

Conclusion

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emerson C Puente whose telephone number is (703) 305-8012. The examiner will be moving in October 13, 2004. The examiner number at the new site is (571) 272-3652. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5631.

Art Unit: 2113

Emerson Puente

9/23/04



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